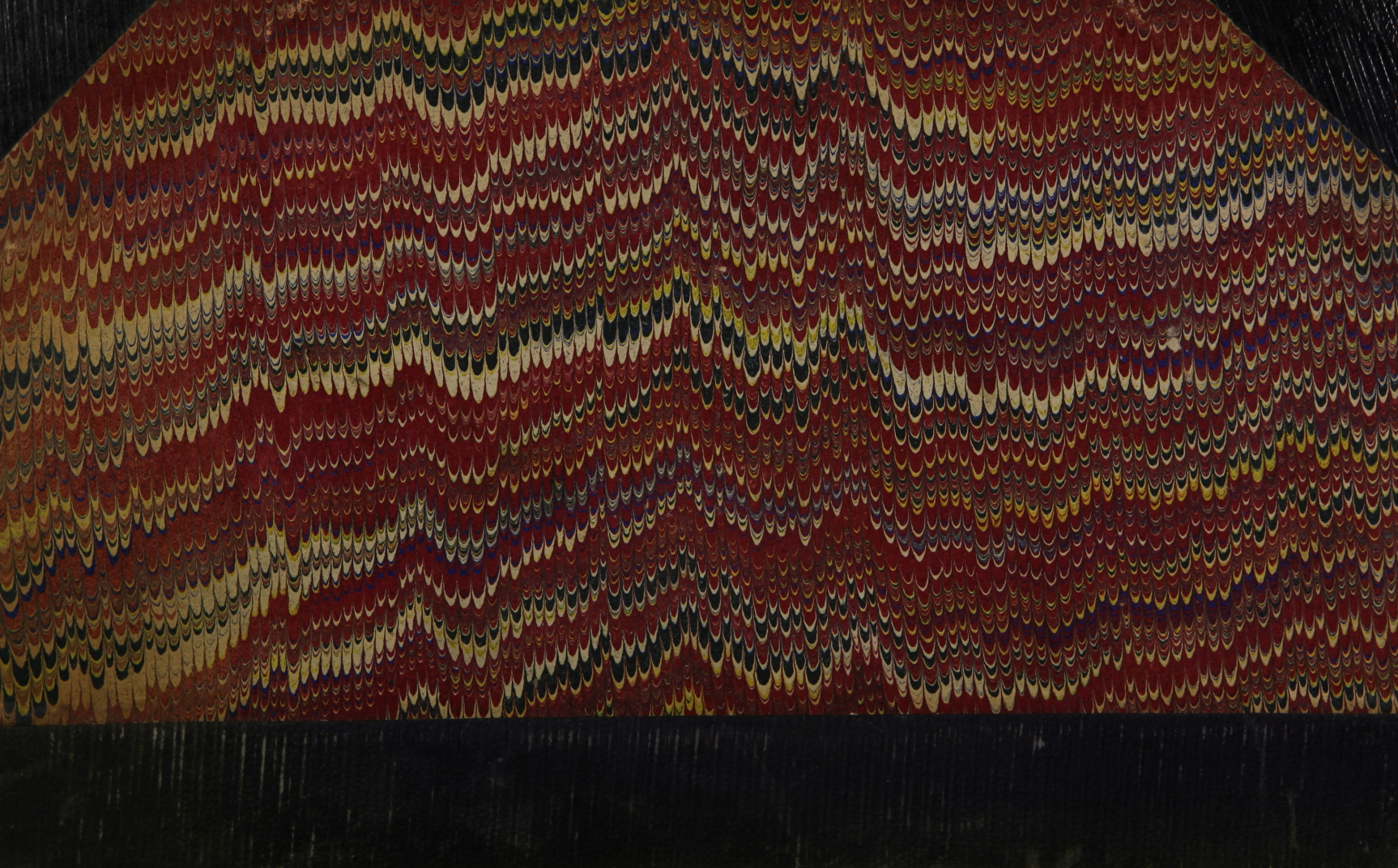

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PROLAPSUS UTERI,

ITS

CHIEF CAUSES AND TREATMENT.

BY

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Surgeon-in-Chief of the Woman's Hospital of the State of New York.

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PROLAPSUS UTERI,

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BY THOMAS ADDIS EMMET, M. D.,

SURGEON-IN-CHIEF OF THE WOMAN'S HOSPITAL OF THE STATE OF NEW YORK.

[Read before the New York State Medical Society, February 7, and the Medical Library and Journal Association, March 10, 1871.]

MR. PRESIDENT:

I present for the consideration of the Society, the subject of prolapse of the uterus, with its chief causes and treatment. So far as this extensive field and the time allotted me will admit, I shall review the local treatment where the displacement has resulted from uterine disease. My chief purpose, however, relates to the application of surgical means under circumstances where the local treatment would be likely to fail, if relied upon exclusively.

The term "falling of the womb," as used by the profession at large, is without meaning; it is but the expression of a symptom, without conveying the slightest idea as to the cause or true condition. It is like unto other terms of common use, which do harm by misleading those who do not think. With many, as soon as a diagnosis is made of "falling of the womb," the dominant idea at once presents itself to introduce a pes-

sary, without any clear appreciation of the cause, and with the effect of frequently aggravating the condition by the means resorted to for relief. It is empirical thus to treat the effect as the cause, and but little progress can be made in the science until this error is fully appreciated. Prolapse of the uterus should mean simply an effect, from some cause by which the organ remains persistently lower in the pelvis than in a state of health. To establish a uniform standard is impossible, as there is an individuality of position normal to each female. In other words, we will sometimes discover in a perfectly healthy female, with a large pelvis, a degree of displacement which should be accompanied, were it the disease, with well-marked symptoms indicative of the condition, and yet she remains unconscious of any deviation from health.

The position of the uterus, when uninfluenced by disease, will vary frequently in the same individual. But as a standard, Savage describes the roof of the pelvis and normal position of the uterus as follows: "A plane passing horizontally backward from just below the subpubic ligament to the attachment of the utero-sacral ligaments at the sacrum, would indicate the level where the utero-vesical peritoneal reflexions pass from the pelvic organs to the pelvic walls; this would also indicate the situation of the vesico-vaginal septum; that is, the base of the bladder and comparatively unyielding side (upper column) of the vagina." "At the commencement of the posterior third the finger comes in contact with the os and and cervix uteri, the uterus projecting the whole of its neck downwards and backwards through a hole, as it were, in that part of the roof; the remainder of the roof is formed by the vaginal cul-de-sac, or curved extension of the posterior (dilatable) side of the vagina, the utero-sacral ligaments completing

this structure up to the sacrum." The uterus is supported in this plane by the utero-sacral ligaments, the sub-peritoneal pelvic cellular tissue, the broad ligaments, and lastly, the round ligaments. As the uterus descends in the pelvis the strain is distributed in the order above given, and does not put the round ligaments on the stretch until it is about to escape from the vaginal outlet.

The chief causes of prolapse of the uterus may be grouped under four heads, and results from one of these, or several combined. First, the uterus may be crowded down into the pelvis from abdominal pressure above, by the weight of some extraneous development in the cavity, from habitual constipation, tight lacing, &c. Second, the prolapse resulting from increased size of the organ, from imperfect involution, obstructed circulation in the organ itself, or elsewhere, from pathological changes of its tissues, the effect of inflammation, or from the development of tumors intimately connected. Third, after parturition, the vagina may remain dilated with a loss of tone in part or throughout the canal. Fourth, from laceration of the perineum, we find rectocele and cystocele resulting, and with the prolapsing vaginal walls, detect the descending uterus at various points, from a slight displacement to complete procidentia.

It is beyond the scope of this paper to enter into a consideration of the first group of causes, acting mechanically from the abdominal cavity to depress the uterus below; I will therefore dismiss this subject by reference only to the effect of constipation. It must be borne in mind that the rectum in the female is shorter, much larger in diameter, and straighter than in the male, and I think, that in regard to size, the colon in the female is also larger. The rectum is

seldom found empty, except immediately after defecation, and as a sluggish condition of the bowels is the rule with the vast proportion of females, fæcal accumulation sometimes takes place to an enormous extent, even in individual cases, where more particular attention is paid to some regularity of habit. Apart from the mechanical effect directly exerted on the uterus by this state of habitual constipation, the organ and its appendages are kept in a state of chronic engorgement from obstruction to the venous circulation, with consequent increase of weight. Savage, in his work on the female pelvic organs, states that "venous obstruction in the course of the ascending cava or spermatic veins influences immediately the state of the pelvic venous circulation; all the pelvic veins soon become surcharged with blood. In cases where the free return of blood into the general system has been obstructed in this way, the pelvic veins become varicose, and the meshes of the pelvic cellular tissue full of such enlargements." With a full appreciation of the fact that within a given space no other portion of the body contains such a vast network of vessels, and from the erectile character of the tissues within which these vessels are matted, so as to give an almost incredible capacity for the accumulation of blood, when any obstruction occurs to the venous circulation, we can readily understand how little is to be accomplished by any mechanical support to the uterus, or from local treatment alone. Farther, these anatomical considerations clearly explain why, with this condition of habitual constipation, we so frequently find the uterus too low in the pelvis, with more or less congestive hypertrophy, and among a class of patients as the result of an artificial and indolent life, spent without purpose.

Every secretion of the body has become perverted, the

nervous system shattered, and the capillary circulation feeble, as shown by cold extremities and frequent headaches. Menstruation is irregular, either as to time or quantity, but as a rule scanty. They are hypochondriacs, and have long contracted the habit of being sick, the most serious complication of all others. It is true that these symptoms exist to a greater or less degree in all uterine disorders, yet here, with a train of symptoms pointing most forcibly to the uterus as the main seat of disease, I can but consider the abnormal local condition as an expression only of that of the whole system. The fact is, on careful investigation of such a case, we are unable to detect a sufficient cause in the local condition to account for the continual backache and inability to stand. The neck of the uterus is usually soft, and may be the seat of a slight erosion; it is frequently tender on pressure, but nearly every portion of the vagina is found equally so. A vaginal leucorrhœa may exist with a slight follicular discharge from the uterine canal. I have found such cases more frequently among the sterile and the unmarried, between thirty and forty years of age, where nature has begun to enter her protest against a blighted sexual life, spent in violation of her laws. Local treatment may be needed, but it is secondary, and futile of relief, in comparison with the benefit to be derived from that instituted by the skilful practitioner who places the whole field of medicine under contribution. The mental and nervous condition of the patient has become so perverted frequently, that for the time being she must be regarded to a certain extent as insane. For her relief her physician must at once attempt to gain her entire confidence, so as to have her so completely under his control as to be able to exert every moral influence, and without it he will make but

little headway. She must be inspired with the belief of her recovery beyond question, and in her desire to carry out the wishes of her physician, she gradually begins to think less of herself. So thoroughly impressed are such cases with the belief that they fully understand their (own) individual condition better than any one else, that without this essential relation exists, the physician will be met at every point with some well-balanced argument to defeat every effort on his part to break up the confirmed habits of an invalid. So essential do I regard this personal influence, that for many years I have refused to undertake the treatment of such extreme cases, except in a private hospital where I can exercise the influence with the feeling, on the part of the patient, of entire dependence on my will. We must regulate every habit of life, correct the condition of the bowels, bring about a proper assimilation of food by a judicious diet, and to restore a healthy circulation and action of the skin, by means of Turkish baths. When the patient is too feeble to take a proper amount of exercise, the muscular development must be brought about by rubbing, and a proper movement of the limbs. Coffee, opium, and the indiscriminate use of whiskey and brandy, must be given up at the beginning, as so much poison in their condition, while the moderate use of tea in most cases is advantageous. As the powers of assimilation are feeble, the food should be given at regular intervals, simple in character, concentrated in form, and moderate in quantity. For the same reason as the digestion is feeble, all preparations of iron, and many of the tonics, although needed, are worthless until this condition has been improved. In treating females suffering from uterine disease, we should never lose sight of the condition of the portal system, from its connec-

tion with the pelvic circulation—but more particularly in its relation with the function of digestion. At dinner, taken in the middle of the day, a wineglass of old sherry, or a strong Burgundy claret, will aid digestion, while all malt liquors, as a rule, are injurious. To produce a good night's rest, in such as are unable to take any exercise during the day, the use of anodynes must be avoided, if possible, while chloral is the least objectionable, but the bromide of sodium answers better in the majority of cases. If possible, the patient must be made to sleep from fatigue; she should retire early, and while in bed be well rubbed from head to foot, and finally, while lying on the back, with a bed-pan under her hips, have a basin or more of hot water slowly pumped into the vagina. This has a most soothing effect, and so much so, that the patient is frequently asleep before the nurse has finished her duties. The room should be moderately cool and well ventilated, the light extinguished, and the patient left alone for the night Many are exceedingly nervous and hysterical at the outset; but, while exhibiting every kindness, firmness must be maintained and no sympathy wasted, with the result, that soon a healthier tone manifests itself. There is no better remedy for nervousness or hysteria, to improve the moral condition, than to leave the patient entirely to herself. This course is apparently a harsh one, but it is kindness in the end, for unless some impression can be made, and none better for the purpose than to arouse at first a feeling of indignation, the patient can seldom be taught to control herself, until she is forced to learn that this can be done in the beginning of an attack, before self-restraint becomes impossible. It soon becomes a matter of pride to exert this control; it has a healthy influence, and the result is, that I seldom see any nervous manifest-

ations among my patients after the first struggle. Every day the patient must take a certain amount of exercise, be in the open air as much as possible, either walking or riding, and not, by sparing her complexion, lose the benefit of the sunlight. I have observed such rapid improvement in the strength of feeble children produced by exposing the whole body to the action of the rays of the sun, that I have often thought, were it practicable to institute even partially this treatment in these cases, we would obtain most excellent results.

I have thus attempted to give a general outline of the constitutional treatment, as it were, applicable to one class, but which, in fact, must in a degree have a bearing on all diseases peculiar to the sex. It is impossible, with so extensive a subject, to do more, leaving the details to be supplied by the judicious practitioner. I have avoided any reference to local treatment, from the fact that it is necessary to bring the health of the patient up to a certain point before any active means can be instituted with success.

As a means to relieve the local irritability, the congestion, and at the same time give tone to the parts, the use of large hot-water injections into the vagina is most valuable. A pint or two of hot water at 98° or 100° F., thrown into the vagina, will at first cause a certain amount of congestion of the vessels; if the injection, however, be increased to a gallon or more, and administered slowly by an attendant, with the hips elevated so that every portion of the vagina is opened by the water retained within the passage, the vessels will contract. On passing the finger into the vagina after an injection properly administered, the canal will be found smaller, as if an astringent injection had been used—and the uterus will

be higher in the pelvis. It will be noticed, also, that the sensitiveness has been diminished. By the use of cold water the same effect is produced at first; but when reaction takes place, the vessels will remain more engorged than before. All my patients, without regard to the special local form of disease, receive one or two such injections a day, only the quantity and temperature being varied for the individual case. It is not an empirical or theoretical procedure, but founded upon sound principle and observation. Some eleven years ago, when cold water injections were in general use, I satisfied myself that the practice was hurtful, and with views of my own, in private practice substituted hot water. During nearly nine years past, since I have been at the head of the Woman's Hospital, the use of hot water for vaginal injection has been the practice. To the last pint of water a certain amount of chlorate of potassa, chloride of sodium, borax, carbonate of soda, glycerine, carbolic acid, or any other remedy applicable may be added, and if the medicated injection be taken at night, a large proportion of it will be retained until morning. Strong astringent injections to check vaginal leucorrhœa are hurtful. The discharge is but an evidence of engorgement, from which the pelvic vessels are attempting to be relieved, as from a safety-valve. The sooner a leucorrhœa is checked the better, to save the patient's strength; but it can only be done with safety by removing the cause.

With irritability of the vagina it is seldom that any pessary can be used with advantage, and even when this symptom is absent an instrument in any form, as we shall see hereafter, will do harm if the vagina is a capacious one. It will be of advantage, however, as soon as it can be borne, to place a support of cotton, saturated with glycerine, in the vagina every

morning, before the patient goes out for exercise, and have it removed on her return. The best form is in the shape of a half-grown mushroom; the top should be soft and large enough, when placed in front of the cervix uteri, to lift it slightly from the floor of the pelvis. The stem portion is made by wrapping it with twine, and a part of the string should be left long enough outside of the vagina to remove it.

If we exclude the existence of fibroids and the effects of inflammation, either in the uterus itself or neighborhood, we will find that imperfect involution, from the increased weight and enlargement of the uterus, is the most common cause of prolapse. The enlarged uterus is indicative of a want of tone in the general system, and therefore the most careful constitutional treatment will be needed. After this course has been instituted, and all tenderness in the neighborhood of the uterus has been removed by the hot-water injections, I rely chiefly upon the use of sponge tents to lessen the size of the organ. When it has been determined that sponge tents can be used with safety, I introduce one or more of them, dipped in a solution of glycerine and carbolic acid, as large in diameter as can be borne, but less in length than the canal. It is prudent to place the patient in bed at once, and administer afterwards an opiate enema per rectum if needed. The tent should remain for twenty-four hours at least, if not producing much irritation; but after the uterus has become accustomed to the use, I often allow them to remain forty-eight hours for the purpose of obtaining the fullest amount of benefit from the profuse discharge. As soon as the discharge becomes offensive, the vagina should be washed out several times a day with a little carbolic acid added to the tepid water injection. It is well not to pull the tent out directly, but seize it in

the grasp of a strong pair of forceps, and remove it without traction by twisting. The fluid on compression escapes into the vagina by this manœuvre, so that the sponge becomes much less in size than the dilated canal. As it is loosened and withdrawn from the cervix, by reversing the twist, all the discharge in the vagina will be again taken up. The advantage gained by removing it in this manner is to lessen pain and diminish the quantity of blood which would be lost by withdrawing it forcibly. I then wash out the uterine canal thoroughly, with either hot or tepid water, sponge out the fluid as far as possible, and either inject or swab out the canal with Churchill's strong tincture of iodine, using the precaution to place beforehand a little cotton beneath the cervix, so that the excess does not run into the vagina. This form of iodine, when thus freely applied, constitutes a good antiseptic, and I know of no other means which will cause a more prompt action of the uterus, for in several cases I have noticed the contraction so rapid as to eject the excess of fluid from the os beyond the vaginal outlet. I have used this application for some eight years past, and always treat the uterine canal in the same manner after the removal of fibroids or other growths within the cavity. Those who are familiar with the practice at the Woman's Hospital will bear me out in the statement that the method is a satisfactory one, and free from danger, provided the same care is taken beforehand to prepare the patient properly, that the full dilatation may be effected without risk. Churchill's preparation of iodine in these cases, as well as a temporary astringent for arresting uterine hemorrhage, is the best of all styptics, from the fact that it does not coagulate the blood so as to leave clots in the canal. Once in ten days is as often as it is safe to follow out this practice,

even when the patient is constantly under observation, for a certain amount of rest is necessary for a few days afterwards, that the general health may not suffer from the confinement. In some cases cinchona in combination with the bichloride of mercury acts well as an alterative; in others arsenic does better, or quinine in combination with strychnia as a tonic. I will say in passing, that apart from the effect that quinine may have in improving the general condition, it certainly at times in large doses seems to exercise a direct action on the uterus by increasing its contractile power. I have seen no beneficial result whatever follow the use of any preparation of ergot in these cases.

If the vagina has not been too much dilated in its upper portion, by the descent of the uterus, frequently the organ will decrease now rapidly in size when held in position by a well-fitting instrument. By this means the circulation becomes properly established in the organ. If the vagina is capacious, however, no permanent benefit will follow the use of any form of pessary, although in the beginning great relief is sometimes afforded. The anterior vaginal wall, with the uterus, will crowd to such an extent into the instrument that the circulation becomes interfered with, the hypertrophy will be increased, and at the same time the capacity of the vagina enlarged. If a larger size instrument is substituted, the prolapse of the vaginal wall can be prevented by putting the parts on the stretch, and the uterus may be held well up in the pelvis, but the same result takes place in the size of the organ from the obstructed circulation. It must be borne in mind that the cervix uteri in health is seldom more than two and a half inches from the urethra. If an instrument can be worn of not more than three inches in length, its use will

frequently be followed by benefit; but should the vagina be so enlarged as to need a greater length, I believe it to be the exception if the vagina regains its normal size without an operation (to be described hereafter) is resorted to. The best instrument in my experience is the block tin ring, which must be moulded to suit each individual case. The best form is some modification of the double lever, with the portion entering the cul-de-sac, the larger curve of the two, so as to throw the fundus of the uterus somewhat forward, if possible, by elevating the neck. It should be made pear-shaped, with the larger fenestrated portion above, and care must be taken to make a proper depression at the other end to shield the urethra from pressure. The chief difficulty in shaping an instrument properly, is behind the pubes, from the fact that one side of the symphysis is often wider than the other, with a marked difference in the curve; if this is not looked to it either causes the instrument to rotate in the vagina, or it will cut into the tissues. When the patient lies on the back with the instrument in place, there must be space enough to allow of the finger being passed entirely around its outer circumference, or it will bind at some point when she stands. As soon as it is ascertained that the instrument can be worn with benefit, it is well to have it duplicated in silver gilt, with the diameter of the tubing much increased beyond that of the block-tin. There are two advantages to be gained—a broader resting place for the tissues, and a most important one, in allowing the instrument to be removed, when advisable, on retiring at night, without endangering the shape. It is well, when there is simply a prolapse, to remove the instrument frequently while the patient is quiet, so that the circulation may not be impeded, and I often give my patients instructions

at night to assume the position on the knees and elbows after taking out the instrument, and to open with the fingers the outlet of the vagina in this posture, so that the uterus may be carried well up into the pelvis by atmospheric pressure. If the patient is all ready for bed, a large portion of the air will be retained if she carefully assumes the horizontal position.

A most frequent cause of prolapse from congestive hypertrophy, and a condition most difficult to relieve, is found as a result of ill-assorted marriages, and with females where means have been resorted to with the object of guarding against conception by preventing the escape of semen into the vagina. I believe for a healthy performance of the function, that the stimulating presence of the semen is needed in the vagina to allow the female organ to be properly relieved of the incident congestion. This habit is to be classed in the same category with self-abuse, and, next to criminal abortion, is the most serious evil of the day with reference to the future welfare of the country. It leads frequently to mutual disgust and divorce, from the often entire absence of sexual pleasure on the part of the female, or at best to great unhappiness at the disappointment in after life, as the want of children begins to be appreciated when it has become now desirable or convenient to have them. The ovaries are often exceedingly tender on pressure, and one or both prolapsed with the uterus. The organ itself is large, and has a soft, doughy feeling. Often from the uterine canal there is a profuse follicular discharge, and I have no doubt, as a cause of subsequent sterility, that some change takes place in the fallopian tubes, by which their canals become eventually obstructed or occluded. Menstruation, as a rule, is profuse and painful at

first, although, from the same cause, engorgement, it may be even scanty. My opinion is, that the organ gradually undergoes fatty degeneration, and that atrophy is to be anticipated earlier in life, with almost entire cessation of the menstrual flow long before the change of life becomes fully established. We also observe, in some degree, a similar condition brought about by various other means instituted for the same purpose—to prevent conception—illustrating how Nature exacts, with unrelenting justice, a penalty for every violation of her laws. The physician's skill will be taxed to the utmost in any case of long standing, to bring the nervous and constitutional condition to a healthy standard. With such tonics as may be indicated, I have used, for a length of time, as large doses of iodide of potassium as could be borne without deranging the stomach. It is well frequently to paint the whole vagina with the strong tincture of iodine, and I have often been surprised at the great sense of relief experienced from this application. Care must, however, be taken, in consequence of the great pain produced, that no portion of iodine is allowed to come in contact with the tissues of the vaginal outlet. Much benefit results from the frequent application of carbolic acid to the uterine canal, passed to the fundus. I have also used freely iodine for the same purpose, but its action is not so marked. Small and frequent blisters should be applied over the region of the ovaries when much pain is experienced. As the patient has rarely any strength to lose by keeping up a discharge, the blister should be at once dressed with a little loose cotton, which, as it adheres, is to be undisturbed until the surface beneath has become healed, when it separates. Sponge salt-baths in the morning, and a hip-bath in the middle of the day, or before retiring at night, are often

beneficial if the temperature is so regulated that a proper reaction takes place; where they do not have a marked benefit, however, at the beginning, and if the ovarian pain is in the least degree aggravated, positive harm will result from continuing their use. As soon as the patient's condition will warrant the move, an entire change of climate and scene is most beneficial.

When acute metritis exists, or cellulitis in the neighborhood of the uterus, the organ is found low in the pelvis, but it soon becomes fixed in position. To enter into a treatment of this condition is foreign to my purpose; I will merely throw out the hint in regard to the frequent and prolonged use of hot water injections, administered at as high a temperature as can be borne.

We may next briefly consider lacerations of the cervix during parturition, and I may also class the lateral operation for dysmenorrhœa when extended to the vaginal junction, as frequent causes of hypertrophy of the uterus, and consequent prolapse of the organ. In proportion to the amount of gaping do we recognize the resulting effects of the injury. Laceration in the median line, from before backward, is attended with comparatively the least of the evil consequences, unless the fissure has become the seat of chronic inflammation consequent upon retarded healing of the surfaces. The bad effects are less marked from the fact that the lateral walls of the vagina keep the sides of the laceration in contact. The reverse is the consequence of lateral laceration or division, and, in proportion as the uterus descends into the pelvis from this cause of irritation, will the gaping be increased, owing to the posterior flap catching on the recto-vaginal septum, while the anterior one is forced forward

in the axis of the vagina, towards its outlet. Gradually, from this forcing apart of the flaps, chronic follicular inflammation is set up, which extends upwards within the canal, and in proportion to the extent of disease will the mucous membrane be rolled out, from above, to become the seat of an intractable erosion. These follicles, thus inflamed, gradually undergo cystic degeneration, with fatty degeneration of the neighboring tissues. At first the neck is unusually soft and hypertrophied, as well as the remaining portion of the organ. As the little cysts burst and empty themselves of a clear, serous fluid, the tissues become indurated, especially if nitrate of silver has been used to heal the supposed ulceration. Ultimately, however, as the emptied cysts contract, atrophy of the neck, as well as the whole organ, takes place. Without a familiarity with the true condition, the previous existence of laceration may be readily overlooked, and is to be recognized by drawing together opposite edges of the cervix by means of a tenaculum in each hand, when the fact will be fully appreciated, and that, in comparison with the size of the entire uterus, a less amount of hypertrophy of the cervix exists. After denuding the lacerated surfaces the flaps must be brought together and united by deep silver sutures. This is necessary, for, as often as the erosion is healed, by any application, will it recur from the constant spreading apart of the flaps on exercising. This operation is the only means of relief, for, after thus removing the exciting cause, the hypertrophy will gradually diminish, and with it the prolapsus.

We recognize, also, in long-existing and neglected disease, a cause of hypertrophy with prolapse, from the too frequent or injudicious use of nitrate of silver and other means resorted

to for healing a supposed ulceration. The cervix has been not only hypertrophied, but indurated to such a degree as to entirely change the normal condition of the tissues. To bring about a healthy change in the condition of the mucous membrane is impossible, but the induration and weight of the uterus may be lessened by the use of sponge tents, were it not that great risk of exciting pelvic inflammation always attends the dilatation of an indurated cicatricial cervix. Sometimes much can be accomplished by the frequent use of the acetic solution of cantharides, for the purpose of blistering the cervix. If the disease has not become too extreme, from the counter-irritation and profuse watery discharge produced by its use, a healthy change may be brought about. As a rule, however, it will be necessary to denude to the submucous tissue the entire cervix with a pair of scissors, and then slide a sufficient amount of the vaginal tissue over the stump to cover it, and secure the flaps by silver sutures, leaving a sufficient gap in the line over the os uteri. It is an operation very readily performed, from the great ease with which the flaps can be formed from the vaginal tissues. By thus removing tissues bearing a close analogy to that existing in a tonsil which has long been the seat of chronic inflammation, and transplanting in its place a fresh set of healthy mucous follicles, we gain a condition by which the absorbents remove rapidly the induration and hypertrophy. This operation was introduced by Dr. Sims a number of years ago, and has proved a most valuable procedure.

We may now consider briefly the hypertrophy and consequent prolapse of the uterus due to disease of the lining membrane of the canal. The term chronic inflammation should not be used, from the fact that we so rarely meet any

product except in the acute form. With so-called ulceration there is no loss of tissue, and after death, when the capillary vessels have been emptied, we may look in vain for any evidence of the previous disease. When the disease is confined to the lining membrane and the submucous tissues, the condition is due to perverted nutrition, or, in other words, imperfect circulation. We may have hypertrophy of the papillæ or mucous follicles of the membrane lining the organ, from chronic engorgement, with enlargement of the uterus, or atrophy from the reverse cause.

With the means at our command, we are seldom able to form an accurate idea as to the extent of the disease involving the canal. From the greater number of follicles below the internal os this portion of the canal is the most liable to disease, but extending gradually to the fundus and submucous tissue, according to its duration. When an erosion exists on the cervix I believe that it is, almost without an exception, but a cropping out of the diseased condition above, or an excoriation from the uterine discharge constantly bathing the parts. As such, it should be treated by applications to the disease above, when it will be found to heal rapidly under the use of hot water vaginal injections and by keeping the surface clean. Of all remedies, none would be so serviceable as frequent uterine injections of hot water for contracting the capillary vessels, and above all keeping the parts free from irritating discharges. Unfortunately, however, we have no means of doing this properly, except in such cases where we may deem it safe to fully dilate the canal with sponge tents. When used, the pressure thus exerted is often beneficial, especially when the discharge is transparent and of a gleety character. After dilation the nozzle of a Davidson syringe

may be introduced with safety in the canal, and a large quantity of hot water injected with great benefit, a bed-pan being used and the water thrown in with care. Unless the canal is sufficiently dilated to introduce the index finger readily, any uterine injections must be attended with great risk of serious consequences and should never be used.

In the application of remedies to the uterine canal, we must necessarily include healthy tissue from our inability to define accurately the extent of the disease. Therefore we must be careful in not doing too much and in selecting agents of a character as free from risks as possible. To the use of all caustics and to the nitrate of silver, I am unqualified in my opposition. Applications of an astringent character are most serviceable, and I know of none answering better for this purpose than the nitrate of silver, were it not for its after-effects. Induration and contraction of the canal is certain to follow its use, in the vast proportion of cases. Erosions readily disappear under the use of potassa cum calce and other caustics, but it is only done by destroying the integrity of the mucous follicles by producing cicatricial tissue, while the evil consequences are not always in proportion to the strength or frequency of use. Chromic acid, diluted with equal parts of water, Churchill's tincture of iodine, solution of the persulphate of iron, acetic acid, when induration exists, chlorate of potash and glycerine, tannin and glycerine, and carbolic acid with equal parts of glycerine are the agents which experience has taught me are attended with the least risk. The chromic acid answering better when there exists a muco-puriform discharge, and should be applied a few days after each menstrual period. It is necessary that the patient should be confined afterwards to bed for a week

at least and carefully guarded from exposure to cold. It is not safe to apply this remedy, or any other to the uterine canal, if there is any indication of lurking cellulitis or tenderness on pressure. We must rely on constitutional means—hot-water injections and daily vaginal dressings of glycerine, until the case is in a proper condition. Chromic acid, when diluted as above mentioned, does not seem to affect healthy tissue in the uterine canal more than that produced by the use of iodine. It, however, does not answer for office practice, and in many respects carbolic acid is preferable. The latter remedy can be applied with advantage once a week, and has the merit of safety, when the patient is not directly under control. Some years ago, I introduced an instrument called an applicator, which is a flattened flexible silver sound. After ascertaining the exact curve of the canal by means of the silver uterine probe, a portion of cotton is twisted around the applicator; the latter is then bent to the proper curve, and having saturated the cotton with the agent to be applied, it is passed to the fundus. Before making the application, the canal must be freed as much as possible from the accumulated discharge by means of a proper syringe, or the effects of the remedy will be, to a great extent, neutralized. It is necessary that the cotton should be only well moistened, as an excess of fluid will often give unnecessary pain and excoriate the vagina.

We will now consider the surgical procedures to be instituted when the case has become a hopeless one, either through neglect or failure after resorting to all other means applicable. After labor either imperfect involution remains—and as the heavy organ settles in the pelvis, the upper portion of the vagina becomes gradually dilated—or this portion of the passage having been overstretched, and not recovering its tone,

allows the organ to rest on the floor of the pelvis until hypertrophy results from obstructed circulation. Gradually the cervix is pressed downward and forward in the vaginal axis, so as to produce a degree of retroversion of the fundus according to the advance made in the prolapse. If the perineum has not been lacerated, and the vesico-vaginal septum, the least yielding portion of the canal, maintains its integrity, the advance towards procidentia is very gradual. By degrees a rectocele is formed, which in time dilates the vaginal outlet; a cystocele may then follow, with the cervix uteri protruding at the vulva. More frequently the integrity of the vesico-vaginal septum remained unimpaired, while the uterus escapes over the fourchette in consequence of the greatly dilated vaginal outlet, while the relative distance between the cervix and neck of the bladder has remained unchanged.

Lastly, laceration of the perineum may have occurred in labor, short of involving the sphincter ani. The vaginal column being thus deprived of a proper support, it will prolapse from below upwards, forming both a rectocele and cystocele, dragging the uterus down to appear externally when complete inversion of the vagina has taken place. In rare instances, a cystocele will first form, dragging down the uterus to the vaginal outlet, with only a prolapse of the upper portion of the recto-vaginal septum, and the occurrence of a rectocele does not take place until, after long standing, the vaginal outlet becomes sufficiently enlarged, by absorption, to offer it no longer a support.

For the relief of procidentia, Marshall Hall, many years ago suggested, but did not, I believe, put in practice, the plan of uniting two denuded strips running parallel on each side from near the cervix uteri to the vaginal outlet, thus making

a double vagina, as it were. The procedure was found, however, to fail in practice, as the anterior wall would prolapse and gradually press back the septum, or by absorption separate the recently united surface until sufficient space was produced for the escape of the uterus.

December 20, 1864, I read a paper on Procidentia Uteri, before the New York Obstetrical Society, which was published in the *New York Medical Journal*, April, 1865. From this paper I quote: "This fact" (referring to the failure of Marshall Hall's method) "led Dr. Sims, in February, 1858, to commence the scarification near the neck of the bladder, with two denuded surfaces, from a common point, diverging in the form of a triangle to each side of the cervix uteri. These surfaces were brought together and secured with interrupted silver sutures in the median line. By so doing, the neck was crowded towards the cul-de-sac, and the fold of vaginal tissue thus formed in front of the cervix effectually prevented any prolapse of the uterus. Previous to the time of Dr. Sims' removal to Europe, in the summer of 1862, we both had frequently operated in this manner without the necessity of any modification occurring. In September, 1862, after three months of great suffering, one of the first patients operated on by Dr. Sims, in this manner, presented herself at the Woman's Hospital for relief. She stated that during four years she had been entirely relieved by the operation, when suddenly, while in the act of lifting, she was seized with a persistent tenesmus, greatly aggravated in the upright position. On examination the line of union was found perfect, with no prolapse of the vaginal wall. But the neck of the uterus had slipped behind the septum into the pouch, thus throwing the fundus into the hollow of the sacrum and fixing

the organ in this position. With great difficulty the neck was disengaged. After returning the uterus to its normal position, immediate relief was obtained. On reflection it became evident that the occurrence of this accident would be in ratio to the extent of the previous procidentia. The more complete the procidentia from relaxation of the vaginal walls the greater the pouch resulting from the amount of tissue folded in. From malposition, the whole organ (but more especially the cervix) is always greatly hypertrophied. After restoration to its normal size, as the neck is no longer grasped by the fold, the latter would naturally in time override the cervix, and force it into the pouch. Nor could this result be guarded against, although the line of union be extended at the time of operating, so as to crowd the cervix uteri fully into the cul-de-sac of the vagina. Impressed with these views, I succeeded in obtaining an examination of two cases operated on by me some eighteen months before. In both the neck was found behind the septum, but producing no inconvenience beyond a backache following any undue exertion. Both had experienced entire relief for a long time, but feared that they were gradually relapsing into their old condition."

On the 10th of October, 1862, I operated on one of these cases, to overcome this difficulty, by closing the triangle. In other words, I connected the two diverging lines by a continuous denuded strip from the extremity of one side of the triangle to the other, running across in front of the cervix uteri, thus effectually preventing the possibility of an entrance into the pouch. Dr. Sims subsequently followed the same plan, leaving, however, a small opening in the cross section, immediately in front of the cervix, which, from its position, is to a certain degree objectionable. During some six or seven years

I operated frequently without making any particular change, but fully appreciated, from the many difficulties to be overcome and constant practice necessary for its proper performance, that the operation could never come into general use. Half an hour at least was occupied in denuding the surfaces, the whole having to be completed before any portion could, with advantage, be brought together, while, during this time, quite a serious loss of blood frequently occurred. Throughout the whole operation the hand of an assistant, occupied in holding an instrument for the purpose of keeping the cervix in the cul-de-sac, obstructed the light, and was in the way. From the mobility of the parts it was exceedingly difficult to keep the proper line of scarification so as to bring the freshened surfaces exactly in the median line. A failure in the column of a direct line of support allows the uterus ultimately to increase the curve and prolapse on the concave side of the line. Above all, to pass the continuous sutures through the cross section in front of the uterus, and to fold over properly these surfaces, the one on the other, without drawing them together as with a running string, was exceedingly difficult.

Some two years ago I attempted to simplify the operation. After anteverting the uterus the patient was placed on the left side, Sims' speculum or some modification of the instrument introduced, and the neck of the uterus kept crowded up into the cul-de-sac by a sponge probang in the hand of an assistant. I then endeavored to find some point about half an inch to each side of the cervix and a little behind the line of its anterior lip, from which I could draw, with a tenaculum in each hand, a triangular shaped fold up to a common point directly in front of the uterus. When two points were found which could be thus brought together

without undue tension, one of the tenacula securely hooked in the tissues, to indicate the point, was released from the hand for the purpose of freshening a surface about half an inch square, at that designated by the other tenaculum. Then a similar surface was freshened around the first tenaculum, and a strip removed from the vaginal surface in front of the uterus, about an inch long by half the width. Having passed a needle armed with a silk loop beneath each of these freshened surfaces, a silver wire was attached to the loop, drawn through, and secured by twisting, thus bringing together, it will be seen, these three points in front of the cervix uteri, with the effect of forming a like but somewhat smaller fold than that produced by Sims' method with the cross section. The chief advantages gained are these: with the loss of only a few drops of blood, the neck of the uterus, at the beginning of the operation, can be secured in the cul-de-sac out of the way, and thus dispensing at the same time with the hand of an assistant. By the old operation the tissues to form the fold were drawn from behind, as it were, and wrapped around in front of the cervix, while the chief support was from the column formed in the median line, by turning in the redundant tissues below. By the last method a direct lateral support is gained from the pelvic fascia above, giving, in many cases by this means alone, a sufficient support entirely independent of the column to be formed afterwards from the tissues turned in along the base of the bladder. The completing of the operation, after having fixed by this means the position of the cervix, is very simple. Two folds on the base of the bladder, in the shape of an ellipse, will have been formed, extending from the points secured in front of the uterus nearly to the vaginal outlet. This excess of

tissue is to be turned in by finding, from time to time, opposite points near the crests of each fold, which can be brought together free from tension. With the view of preventing a loss of blood, but half an inch need be denuded at a time on each side, the sutures then introduced and secured, thus advancing step by step until the operation has been completed by turning in the folds until lost on the vaginal surface. From four to five sutures should be inserted to the inch, a silk loop being passed first, to which the silver suture is to be afterwards attached, for the purpose of drawing it through. The needle should be introduced so as to include a liberal amount of tissue, and the sutures twisted only just sufficiently to bring the raw surfaces in contact, or the tissues included will become strangulated from the swelling of the parts. They can be removed on the eighth to the tenth day. No special after-treatment is needed beyond keeping a self-retaining sigmoid catheter in the bladder, as after the operation of vesico-vaginal fistula, until the parts have become well united, and at the same time confining the patient to the recumbent position for two or three weeks.

Where the upper portion of the vagina is only dilated, so as to let the enlarged uterus rest on the floor of the pelvis, I perform the same operation in principle, but the line is extended only for a short distance until a point has been reached where the fold can be terminated on a common level with the vaginal surface.

Beyond doubt many cases can be relieved, so far as local means are in question, by rest, astringent injections, and a properly fitting pessary. But beyond a certain point these means are futile, and a pessary in any form will prove but of temporary benefit and in the end positively detrimental.

When the vaginal walls are very much relaxed, it is impossible to prevent them from crowding down within the circumference of any fenestrated form of pessary to an extent producing almost strangulation, unless it is of a sufficient length to put the passage on the stretch. In either case, however, the result is the same by increasing the capacity of the vaginal canal and enlargement of the uterus from obstructed circulation. When a solid instrument is used, like a globe pessary, the capacity of the canal is also increased by the walls crowding in around it and pressing it forward as a dilator. One instrument after another will be resorted to, with the necessity of increased size for relief, until the canal may be dilated to the full extent of the pelvic passage, and ultimately the patient becomes bed-ridden or the procidentia remains complete.

When there is no laceration of the perineum, or dilation of the vaginal outlet from rectocele, the operation described as applicable for the anterior wall may be of itself sufficient for relief. If, however, the posterior portion of the canal has been involved, the uterus will gradually advance and ultimately escape from the vagina, even after the anterior operation has been performed, but the relative distance between the cervix uteri and neck of the bladder gained by the operation will remain unchanged, as we have seen. While the radial distance between these two points is preserved, the base of the bladder will swing as a trap-door, were the hinge placed under the pubes, and advances with the uterus as it is dragged down by the prolapsing posterior wall, to pass through the vaginal outlet as soon as it has been dilated sufficiently. This condition has been frequently overlooked, and the operative procedure consequently unjustly con-

demned. After the first operation it is impossible for the uterus to prolapse in consequence of the increased radius gained in the position of the cervix from the symphysis pubis as a common centre, provided the lower portion of the canal is in a state of integrity. When such is not the case, it will be necessary either to close the perineum alone, or in addition perform the operation for rectocele.

The operation on the posterior wall for rectocele resembles closely, in general principle, the one already described. The denuded surfaces are to extend from the fourchette upward in the form of an ellipse toward the cul-de-sac, until the protruding tissues have been turned into the vaginal level. It is necessary to operate with the patient on the back, with Sims' speculum introduced under the arch of the pubis. The operation is a very difficult one to perform from the want of room, and the venous hemorrhage is frequently excessive. The superabundant tissue should be pressed back upon the rectum by a stiff sound, curved in conformity with the vaginal canal, and held in the median line by the hand of an assistant. Along the edge of the sulcus thus formed as the tissues lie in contact on the vaginal plane, the denuded line must be extended. As the tissues are brought together, with a tenaculum in each hand, to judge of the proper degree of tension, it is well to snip out a small portion of mucous membrane at opposite points to serve as a guide to indicate the line to be freshened. Although we have the disadvantage of an obstructed view from the flow of blood when the operation is commenced from above, this plan is attended with the least inconvenience. A limited portion of tissue should be only freshened at a time, the sutures introduced and twisted as the operation is advanced. As it is necessary that

the sutures should lie perfectly flat, seize the extremity with a pair of forceps and place a tenaculum under the wire close to the vaginal surface to act as fulcrum over which the suture is bent downward, then remove the tenaculum and make pressure about the middle, at the same time that the extremity in the grasp of the forceps is bent up in the opposite direction, cut off the end, and if the manœuvre is done properly the suture will remain in close contact with the vaginal surface.

In the operation for closing the perineum, the denuded surface should be extended for half an inch or so on the recto-vaginal septum, so that a firm support to the canal shall be given. Five interrupted sutures are generally needed, three of which should include at the same time the denuded space on the rectal septum, and the other two the labia alone. I leave each suture about three inches in length, and when the operation has been completed, secure the whole number together, like the radii of an open fan, by a loop of wire around their ends. There is less risk of labial abcess or accidental irritation of any individual suture by adopting this plan. The urine must be drawn with great care, for if a small quantity is allowed to come in contact with the surfaces brought together, or to run back into the vagina, the success of the operation will be endangered. The patient must be kept in bed with her knees tied together, and opium administered from time to time per rectum, if needed. The perineal sutures should be removed on the sixth or seventh day, for they become sources of irritation if allowed to remain longer, and the knees must be kept tied afterward, until the parts have united firmly. The sutures for the rectocele may be allowed to remain for two weeks or more, until

it is safe to introduce the small size speculum under the arch of the pubes.

By the various operations described the vagina will be restored to its original size and condition, with no other change than the fold formed in front of the cervix, which even will disappear in the course of time. I wish to impress particularly this fact, that the natural capacity of the vagina is not lessened, nor can it be by these operations. The object is simply to relieve the overstretched tissues from strain, that they may retract, and this is done by taking in a plait, by which means the tissues thus turned in, if so relieved, regain their tone so far that in a few months all trace of the operation disappears. The greater proportion of the profession is impressed with the erroneous idea that the object is to *narrow* the vagina, and so the operative procedure is persistently termed. Hence the common prejudice existing calculated to defeat an unbiassed investigation. The vagina can be easily shortened by uniting denuded surfaces transverse to its axis, but to narrow the canal in its diameter, to a less degree than existed in the virgin state after puberty, is impossible by any surgical procedure, and it is never accomplished except as a result of inflammatory action. If by any chance the denuded surfaces brought together were so far apart that when approximated an undue degree of tension existed, the sutures are certain to cut out, leaving the parts in the original condition. This is due to the unyielding line formed along the vaginal sulcus on each side, from the cellular tissue connected with the pelvic fascia; it can be stretched to a certain degree, but no suture can stand more than a few days its persistent tenacity. I speak from an experience based on some sixty cases, upon which number I have operated by different

methods during the past ten years. My facilities have been unusually great for watching the after effects, for in nearly every case of failure in any particular feature, I believe that sooner or later the patient has returned, giving me the opportunity of studying the cause, rectifying the difficulty, and guarding against a repetition of the same error. Having had the advantage of assisting Dr. Sims in his first cases some fifteen years ago, and afterwards watching the gradual development of every progressive stage of the operation to its present degree of perfection, I feel as if I may speak with authority.

I must apologize for having occupied so long the valuable time of the Society, but I have found it impossible, even in a most superficial manner, to condense within a reasonable space a subject of such general interest and of so extensive a bearing.